IN THE CLAIMS

1. (**currently amended**) A targeted oligonucleotide construct comprising:

a targeting moiety which localizes to a site in an organism;

an oligonucleotide that is an antisense oligonucleotide or an antisense oligonucleotide analog that is modified to enhance its efficacy, pharmacokinetic properties, or physical properties; and

an imaging agent suitable for use in Positron Emission Tomography (PET), Single Photon Emission Tomography (SPECT) or Magnetic Resonance Imaging (MRI)[[,]];

wherein the targeting moiety is selected from an antibody, a lectin, a ligand, a sugar, a steroid, a hormone, a nutrient, a small molecule and a protein, ~~and wherein~~

~~said~~ the targeted oligonucleotide construct has essentially no ability to cross the blood/brain barrier as determined by a biodistribution analysis,

the oligonucleotide is designed to promote retention of the construct by a cell;

the oligonucleotide is a C-myb, N-myc, C-myc or PSA gene specific antisense oligonucleotide or oligonucleotide analog; and

the targeting moiety, oligonucleotide and imaging agent are covalently linked.

2. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is selected from the group consisting of: an unpaired spin atom, a free radical, a paramagnetic contrast agent and a metal chelate.

3. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is a paramagnetic contrast agent selected from the group consisting of: gadolinium, cobalt, nickel, manganese, and iron.

4. (**canceled**)

5. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is a radiolabel selected from the group consisting of: ^{131}I, ^{123}I, ^{99m}Tc, ^{18}F, ^{68}Ga, ^{67}Ga, ^{72}As, ^{89}Zr, ^{64}Cu, ^{62}Cu, ^{111}In, ^{203}Pb, ^{198}Hg, ^{11}C, ^{97}Ru, and ^{201}Tl.

6. (**previously presented**) A targeted oligonucleotide construct as in claim 5, wherein the radiolabel is a chelate.

7. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein said imaging agent is an iron, lanthanide or gadolinium unpaired spin atom or free radical.

8. (**previously presented**) A targeted oligonucleotide construct as in claim 1, further comprising a therapeutic agent.

9. (**canceled**)

10. (**previously presented**) A targeted oligonucleotide construct as in claim 8, wherein the therapeutic agent is selected from an enzyme, an enzyme inhibitor, a receptor ligand, a radioisotope, an antibiotic, a steroid, a hormone, a polypeptide, a glycopeptide, a phospholipid, and a drug.

Claims 11-24 (**canceled**)

25. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog that is selected from the group consisting of: an antisense oligonucleotide that is modified with a cell uptake facilitating moiety, an antisense oligonucleotide that is modified with a stabilizing moiety, an antisense oligonucleotide that is modified to enhance its solubility, and an antisense oligonucleotide that is modified to enhance its resistance to nuclease digestion.

26. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a moiety selected from the group consisting of: biotin, amino glycoside, lipophilic, phosphorothioate, morpholino and deoxy.

27. (**previously presented**) A targeted oligonucleotide construct as in claim 1, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a phosphorothioate moiety.

28. (**canceled**)

29. (**canceled**)

30. (**previously presented**) A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog that is selected from the group consisting of: an antisense oligonucleotide that is modified with a cell uptake facilitating moiety, an antisense oligonucleotide that is modified with a stabilizing moiety, an antisense oligonucleotide that is modified to enhance its solubility, and an antisense oligonucleotide that is modified to enhance its resistance to nuclease digestion.

31. (**previously presented**) A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a moiety selected from the group consisting of: biotin, amino glycoside, lipophilic, phosphorothioate, morpholino and deoxy.

32. (**previously presented**) A targeted oligonucleotide construct as in claim 8, wherein the oligonucleotide is an antisense oligonucleotide analog derivatized with a phosphorothioate group.

33. (**canceled**)

34. (**canceled**)